#### FIG.1

# FIG. 2A

| 5 ' | AGCCG | GCG | 11<br>CAG  | GGT | GGC | 20<br>CGG  | GGA   | GGG  | 29<br>GTG   | AGC | AGG | 38<br>GTG  | ccc | CTG | 47<br>GCT            | GCT | GGG | 56<br>GTC    |
|-----|-------|-----|------------|-----|-----|------------|-------|------|-------------|-----|-----|------------|-----|-----|----------------------|-----|-----|--------------|
|     | P     | Α   | Q          | G   | G   | R          | G     | G    | v           | s   | R   | v          | P   | L   | <b>A</b>             | A   | G   | v            |
|     | TGC   | AGG | 65<br>TCA  | CCG | AGT | 74<br>CCC  | CAG   | GAG  | 83<br>AGG   | GGA | CTC | 92<br>CTA  | AGA | AGC | 101<br>CAC           | CTG | CCT | 110<br>GTG   |
|     | С     | R   | s          | P   | s.  | P          | Q     | E    | R           | G   | L   | L          | R   | s   | Н                    | L   | P   | . v          |
|     | TTT   | ACC | 119<br>CGG | CAG | CGA | 128<br>GCG | CGC   | AGG  | 137<br>CCC  | CCG | CGA | 146<br>ACT | CCT | GGC | 155<br>AGC           | GCT | CAG | 164<br>GAA   |
|     | F     | Т   | R          | Q   | R   | A          | R     | R    | P           | P   | R   | T          | P   | G   | s                    | A   | Q   | E            |
|     | AGG   | CCG | 173<br>TTG | CGC | CTC | 182<br>GCG | _AAG. | _GAA | 191<br>-AGA | GAG | CCG | 200<br>TTG | ÁĊC | ATG | 2.0.9<br><b>G</b> TT | GCA | ACT | 2:1-8<br>GGC |
|     | R     | P   | L          | R   | L   | A          | К     | E    | т           | E   | P   | L          | T   | М   | V                    | A   | T   | G            |
|     | AGT   | TTG | 227<br>AGC | AGC | AAG | 236<br>AAC | CCG   | GCC  | 245<br>AGC  | ATT | TCA | 254<br>GAA | TTG | CTG | 263<br>GAC           | TGT | GGC | 272<br>TAT   |
|     | s     | L   | s          | s   | K   | N          | P     | A    | s           | I   | s   | E          | L   | L   | Ď                    | C,  | G   | Y            |
|     | CAC   | CCA | 281<br>GAG | AGC | CTG | 290<br>CTA | AGT   | GAT  | 299<br>TTT  | GAC | TAC | 308<br>TGG | GAT | TAT | 317<br>GTT           | GTT | CCT | 326<br>GAA   |
|     | Н     | P   | E          | s   | L   | L          | s     | D    | F           | D   | Y   | W          | D   | Y   | v                    | v   | P   | E            |
|     | CCC   | AAC | 335<br>CTC | AAC | GAG | 344<br>GTA | ATA   | TTT  | 353<br>GAG  | GAA | TCA | 362<br>ACT | TGC | CAG | 371<br>AAT           | TTG | GTT | 380<br>AAA   |
|     | P     | N.  | L          | N   | E   | v          | I     | F    | Е           | Е   | s   | Т          | С   | Q   | N                    | L   | v   | К            |
|     | ATG   | CTG | 389<br>GAG | AAC | TGT | 398<br>CTG |       | AAA  | 407<br>TCA  | AAG | CAA | 416<br>ACT | AAA | CTT | 425<br>GGT           | TGC | TCA | 434<br>AAG   |
|     | ` M   | , L | Е          | N   | С   | L          | s     | К    | s           | К   | Q   | T          | К   | L   | G                    | С   | s   | К            |
|     | GTC   | CTT | 443<br>GTC | CCT | GAG | 452<br>AAA | CTG   | ACG  | 461<br>CAG  | AGA | ATT | 470<br>GCT | CAA | GAT | 479<br>GTC           | CTG | CGG | 488<br>CTT   |
|     | v     | L   | V          | P   | E   | K          | L     | Ŧ    | Q           | R   | I   | A          | Q   | D   | v                    | L   | R   | L            |
|     | TCC   | TCA | 497<br>ACG | GAG | CCC | 506<br>TGC | GGC   |      | 515<br>CGA  |     |     | 524<br>GTT | ATG | CAC | .533<br>GTG          | AAC | TTG | 542<br>GAA   |
|     | S     | S   | T          | E   | P   | С          | G     |      |             |     |     |            | М   | Н   | v                    | N   | L   | Е            |
|     | ATT   | gaa | 551<br>AAT | GTA |     | 560<br>AAA | AAG   |      | 569<br>GAT  | AGG |     | 578<br>GTG | TGT | GAT | 587<br>TCT           | AGC | GTC | 596<br>GTA   |
|     | I     | E   |            | v   |     | К          | K     |      |             | R   |     |            | С   | D   |                      | s   | v   | V            |
|     | CCT   | ACT | 605<br>TTT | GAG |     | 614<br>ACA | CTT   |      | 623<br>TTT  | AAG |     | 632<br>GAG | AAC |     | 641<br>TCA           | TGG | ACT | 650<br>AGC   |
|     | P     | T   | F          | E   |     | T          | L     |      |             | K   |     |            | N   |     |                      | W   | T   | s            |

## FIG. 2B

| TTC |     |                | TTT | TTC | TTT         | AGT |     | GGT         |     | TTC     | TCC         | TCT     |         | TTC         | AGG        | AGA | ACT        |
|-----|-----|----------------|-----|-----|-------------|-----|-----|-------------|-----|---------|-------------|---------|---------|-------------|------------|-----|------------|
| F   |     |                |     |     |             |     |     |             |     |         |             |         | G       |             | R          |     |            |
|     |     |                | AGC |     | GGA         | TTT | CGA | CTT         |     | AAG     | AAA         | AAA     | CTT     | TAC         | TCA        | CTG | ATT        |
| 正   | Ĭ   | L              | S   | S   | G           | F   | R   | L           | v   | K       | K           | K       | L       | Y           | s          | L   | I          |
| GGA |     |                |     |     |             | GGG | TCC | TAA         | AAA | GGG     | AAA         | ATA     | TAT     | AAA         | GAT        | TAT |            |
| G   |     |                |     | I   |             |     |     |             |     |         |             |         |         |             |            |     |            |
|     |     |                | TAG | TAA | AAC         | TAT | TCA | GCT         | AGT | CAG     | CTA         | AAG     | TCA     | TTT         | GTA        | GTT | TGC        |
|     |     |                | CCT | AAA | TAA         | GAA | ACC | CCA         | AAT | GTA     | GTC         | TCT     | TTT     | CTT         | TCT        | GTG | TTT        |
| CAC | ATT | 929<br>CAT     | AGC | AAC | 938<br>TGC  | AGC | TAA | 947<br>CAG  | GCT | GAT     | 956<br>TTT  | CTG     | GCC     | 965<br>TTT  |            | GAA | 974<br>GTG |
| ATT | CAA | 983<br>AAT     | AGT | GTA | 992<br>GAT  | TTT | CTG | LOO1<br>CAT | AGA | TCC     | L010<br>CAT | TTT     | TGT     | LO19<br>ACA | GAA        | TTG | 028<br>AAT |
| GGG | ATG | L037<br>GAA    | TAG | GTA | L046<br>AGC | AAA | AGT | L055<br>AGA | AGC | CCA     | LO64<br>TTT | GAG     | TTT     | LO73<br>TAC | ATT        | TGA | 082<br>TTC |
|     | AAT |                | GTT |     | GGT         | AGG | CTT | GGT         |     | AGA     | CTA         | TAT     | AAA     | CCA         | GAT        | TTG | CCT        |
|     | TTG |                | TTC | ATA | TGG         | CTT | TTT | TTT         | CTG | TAA     | GTT<br>     | TTC     | AGA     | GGA         | <b>TTT</b> | TTT | AAA<br>    |
|     | CAG |                | CAT |     | AAA<br>     | TGA | TAT | TTA         | GCC | TAT     | CAA         | AAC     | TTC     | CAA         | AAG        | CCC | ACA        |
|     | CCA |                | CCT | GAC | TCA         | AAT | TTG | AAG         | GGT | TTT<br> | TAG         | ACA     | GGA     | GGG         | TAG        | GAT | TAA        |
| GTA | GGT |                | TTT |     | TAA         | AGC | TTA | ACC         | CTA | GGT     | AAG         | AGT     | AAA<br> | TGA         | GAA        | ATA | TTA        |
|     | CAA | TAA            | TGG | AAC | TGC         | TTC | ACT | GTT         | TCT | TGG     | TGA         | CTT     | CCT     | CAC         | TCT<br>    | AAT | GTT        |
|     | AAG | AGG            | CAA |     | AAG         | CTT | ATG | GTG         | CCA | TTT     | CAG         | TAA     | CCA     | CGG         | TGT        |     | TTT<br>    |
|     | TGC | $\mathtt{CTT}$ | TAT | AAG | CTC         | AGT | TTC | CCT         | TGT | TCT     | TAA         | GTG     | TTG     | AAT         | ACT        | GTC | TTT        |
|     | CTA |                | AAA |     | AAA         | ATA | TTG | AAC         | TGA | TAT     | TTC         | TGT     | GTG     | TAG         | <b>TTT</b> | ATT | ACT        |
|     | CCA |                | AGT | GAA |             | TGA | ATA | CCT         | GTG | AGG     | ATA         | GGA     | AAT     | GAG         | TTC        | TGA | GAT        |
|     | GTC |                | CTC |     | TTC         | ACT | TAG | TAA         | TCT | ATC     | CTC         | TTT<br> | TCA     | GTA         | TTA        | CAT | GTG<br>    |
|     | 1   | .685           |     | 3   | 1694        |     | 1   | 1703        |     | 3       | 1712        |         | ]       | 1721        |            | 1   | .730       |

## FIG. 2C

| CTT             | AAT CTC  | AGA                       | TGA ACC   | ATT                                     | TCA CCA   | TGG             | CAG TGT   | TAT                        | CTC ATC   | TCT                       | GGG CTT   |
|-----------------|--|---------------------------|---|---|---|-----------------|---|----------------------------|---|---------------------------|---|
|                 |  |                           |   |   |   |                 | <b>-</b>  |                            |   |                           |   |
|                 | 1739   |                           | 1748  |   |   |                 | 1766  |                            | 1775  |                           | 1784  |
|                 | TGG GAA  |                           |   |   |   |                 |   |                            |   |                           |   |
| -,              | 1793   |                           |   |   |   |                 | 1820  |                            |   |                           |   |
|                 | CTA CCA  |                           |   |   |   |                 |   |                            |   |                           |   |
|                 |  |                           |   |   |   |                 |   |                            |   |                           |   |
| ልጥር             | 1847<br>GAG ATA  |                           |   |   |   |                 | 1874  |                            |   |                           | 1892  |
|                 |  |                           |   |   |   |                 |   |                            |   |                           |   |
|                 | 1901   |                           | 1910  |   |   |                 | 1928  |                            | 1937  |                           | 1946  |
|                 | TGC ATG  |                           |   |   |   |                 |   |                            |   |                           |   |
|                 | 1955   |                           |   |   |   |                 | 1982  |                            | 1991  |                           | 2000  |
| AAA             | GGC CTG  |                           |   |   |   |                 |   |                            |   | TCT                       |   |
|                 |  |                           |   |   |   |                 |   |                            |   |                           |   |
| Toron           | 2009<br>TAT GTT  |                           |   |   | 2027  |                 | 2036  |                            | 2045  | mm/                       | 2054  |
|                 |  |                           |   |   |   |                 |   |                            |   |                           |   |
|                 | 2063   |                           | 2072  | ?                                       | 2081  |                 | 2090  |                            | 2099  |                           | 2108  |
| GCT             | TTC ATA  |                           |   |   |   |                 |   |                            |   |                           |   |
|                 | 2117   |                           | 2126  |   | 2135  |                 | 2144  |                            | 2153  |                           |   |
| CCT             | AGC TAT  |                           |   | TTC                                     | ACA TGC   | TGG             | AGA CTG   | GCG                        |   |                           |   |
|                 |  |                           |   |   |   |                 |   |                            |   |                           |   |
| man             | 2171<br>TCC TGG  |                           | 2180  | , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | 2189  | ama             | 2198  |                            | 2207  |                           | 2216  |
|                 | TCC TGG  |                           |   |   |   |                 |   |                            |   |                           |   |
|                 | 2225   |                           | 2234  |   | 2243  |                 | 2252  |                            | 2261  |                           | 2270  |
|                 | TAA AAT  |                           |   |   |   |                 |   |                            | AAA CTA   | AAC                       | TCT TCA   |
|                 |  |                           |   |   |   |                 |   |                            |   |                           |   |
| ****            | 2270   |                           |   |   |   |                 |   |                            | 2215  |                           |   |
| AAT'            | 2279<br>GCT TGG  |                           | 2288  | 3                                       | 2297  |                 | 2306  |                            | 2315  |                           | 2324  |
|                 |  | AAA<br>                   | 2288<br>GAT ACT   | ACA                                     | 2297<br>AAG CCA   | ATC             | 2306<br>TTT ATA   | GAA                        | 2315<br>TTG GGC   | CAA                       | 2324<br>GAT AAA   |
|                 | GCT TGG  | AAA<br>                   | 2288<br>GAT ACT<br>2342   | ACA                                     | 2297<br>AAG CCA<br><br>2351   | ATC             | 2306<br>TTT ATA<br><br>2360   | GAA                        | 2315<br>TTG GGC<br>2369   | CAA                       | 2324<br>GAT AAA<br><br>2378   |
| TCT             | GCT TGG  | AAA<br><br>TTT            | 2288 GAT ACT2342 TGC ATC  | ACA                                     | 2297<br>AAG CCA<br>2351<br>ATT GTT  | ATC             | 2306<br>TTT ATA<br>2360<br>CTC CAA  | GAA<br><br>AGG             | 2315<br>TTG GGC<br>2369<br>TTC ACT  | CAA                       | 2324 GAT AAA 2378 TTT CTG   |
| TCT             | GCT TGG 2333 ATG TTG   | AAA<br><br>TTT            | 2288 GAT ACT2342 TGC ATC  | ACA                                     | 2297<br>AAG CCA<br>2351<br>ATT GTT  | ATC             | 2306<br>TTT ATA<br>2360<br>CTC CAA  | GAA<br><br>AGG             | 2315<br>TTG GGC<br>2369<br>TTC ACT  | CAA                       | 2324 GAT AAA 2378 TTT CTG   |
| TCT             | GCT TGG 2333 ATG TTG 2387 CTG TCC  | AAA<br><br>TTT<br><br>TGG | 2288 GAT ACT 2342 TGC ATC 2396 AGT TGT                                | GCT                                     | 2297 AAG CCA 2351 ATT GTT 2405 CAC TGA  | ATC AAG CTG     | 2306 TTT ATA 2360 CTC CAA 2414 GGC AAG  | GAA<br><br>AGG<br><br>GCT  | 2315 TTG GGC 2369 TTC ACT 2423 TCT TGG  | CAA GTG GCA               | 2324 GAT AAA 2378 TTT CTG 2432 TGG ATG                                |
| TCT             | GCT TGG2333 ATG TTG2387 CTG TCC  | AAA<br>TTT<br>TGG         | 2288 GAT ACT 2342 TGC ATC 2396 AGT TGT                                | ACA<br><br>GCT<br>                      | 2297 AAG CCA 2351 ATT GTT 2405 CAC TGA  | ATC AAG CTG     | 2306 TTT ATA 2360 CTC CAA 2414 GGC AAG  | GAA<br><br>AGG<br><br>GCT  | 2315 TTG GGC 2369 TTC ACT 2423 TCT TGG  | CAA GTG GCA               | 2324 GAT AAA2378 TTT CTG2432 TGG ATG                                  |
| TCT             | GCT TGG 2333 ATG TTG 2387 CTG TCC 2441                                   | AAA<br><br>TTT<br><br>TGG | 2288 GAT ACT 2342 TGC ATC 2396 AGT TGT 2450                           | G ACA                                   | 2297 AAG CCA 2351 ATT GTT 2405 CAC TGA 2459                                   | ATC AAG CTG     | 2306 TTT ATA 2360 CTC CAA 2414 GGC AAG 2468                                   | GAA<br>;<br>AGG<br><br>GCT | 2315 TTG GGC 2369 TTC ACT 2423 TCT TGG 2477                                   | CAA<br><br>GTG<br><br>GCA | 2324 GAT AAA 2378 TTT CTG 2432 TGG ATG 2486                           |
| TCT CCG         | GCT TGG2333 ATG TTG2387 CTG TCC  | AAA TTT TGG TGG           | 2288 GAT ACT 2342 TGC ATC 2396 AGT TGT 2450 CCT TTT                   | ACA GCT CAC                             | 2297 AAG CCA 2351 ATT GTT 2405 CAC TGA 2459 ACT AAC                           | ATC AAG CTG AGT | 2306 TTT ATA 2360 CTC CAA 2414 GGC AAG 2468 TAT CTT                           | GAA AGG GCT TGA            | 2315 TTG GGC 2369 TTC ACT 2423 TCT TGG 2477 CTC TCT                           | CAA GTG GCA TGC           | 2324 GAT AAA 2378 TTT CTG 2432 TGG ATG 2486 CTG TTA                   |
| TCT CCG TAG     | GCT TGG 2333 ATG TTG 2387 CTG TCC 2441 AAC TGT 2495                      | AAA TTT TGG TGT           | 2288 GAT ACT 2342 TGC ATC 2396 AGT TGT 2450 CCT TTT 2504              | CCC                                     | 2297 AAG CCA 2351 ATT GTT 2405 CAC TGA 2459 ACT AAC 2513                      | ATC AAG CTG AGT | 2306 TTT ATA 2360 CTC CAA 2414 GGC AAG 2468 TAT CTT 2522                      | GAA GCT TGA                | 2315 TTG GGC 2369 TTC ACT 2423 TCT TGG 2477 CTC TCT 2531                      | CAA<br>GTG<br>GCA<br>TGC  | 2324 GAT AAA 2378 TTT CTG 2432 TGG ATG 2486 CTG TTA 2540              |
| TCT CCG TAG     | GCT TGG  | AAA TTT TGG TGT AAT       | 2288 GAT ACT 2342 TGC ATC 2396 AGT TGT 2450 CCT TTT 2504 GGT GAT      | ACA GCT CAC CCC GCC                     | 2297 AAG CCA 2351 ATT GTT 2405 CAC TGA 2459 ACT AAC 2513 TTA TGG              | ATC AAG AGT AAG | 2306 TTT ATA 2360 CTC CAA 2414 GGC AAG 2468 TAT CTT 2522 GCT GTT              | GAA AGG GCT TGA            | 2315 TTG GGC 2369 TTC ACT 2423 TCT TGG 2477 CTC TCT 2531 TTA ATA              | CAA GTG GCA TGC TTC       | 2324 GAT AAA 2378 TTT CTG 2432 TGG ATG 2486 CTG TTA 2540 CTG TTA      |
| TCT CCG TAG     | GCT TGG 2333 ATG TTG 2387 CTG TCC 2441 AAC TGT 2495                      | AAA TTT TGG TGT AAT       | 2288 GAT ACT 2342 TGC ATC 2396 AGT TGT 2450 CCT TTT 2504 GGT GAT      | GCC                                     | 2297 AAG CCA 2351 ATT GTT 2405 CAC TGA 2459 ACT AAC 2513 TTA TGG              | ATC AAG AGT AAG | 2306 TTT ATA 2360 CTC CAA 2414 GGC AAG 2468 TAT CTT 2522 GCT GTT              | GAA AGG TGA AAA            | 2315 TTG GGC 2369 TTC ACT 2423 TCT TGG 2477 CTC TCT 2531 TTA ATA              | CAA GTG GCA TGC TTC       | 2324 GAT AAA 2378 TTT CTG 2432 TGG ATG 2486 CTG TTA 2540 CTG TTA      |
| TCT CCG TAG TGC | GCT TGG 2333 ATG TTG 2387 CTG TCC 2441 AAC TGT 2495 TTA CAA 2549 GAA ATT | AAA TTT TGG TGT AAT AAA   | 2288 GAT ACT 2342 TGC ATC 2396 AGT TGT 2450 CCT TTT 2504 GGT GAT 2558 | CTA                                     | 2297 AAG CCA 2351 ATT GTT 2405 CAC TGA 2459 ACT AAC 2513 TTA TGG 2567 TTT TTG | ATC AAG AGT AAG | 2306 TTT ATA 2360 CTC CAA 2414 GGC AAG 2468 TAT CTT 2522 GCT GTT 2576 ATA AAA | GAA AGG GCT TGA AAA        | 2315 TTG GGC 2369 TTC ACT 2423 TCT TGG 2477 CTC TCT 2531 TTA ATA 2585 TAT ATA | CAA GTG GCA TGC TTC       | 2324 GAT AAA 2378 TTT CTG 2432 TGG ATG 2486 CTG TTA 2540 CTG TTA 2594 |
| TCT CCG TAG TGC | GCT TGG 2333 ATG TTG 2387 CTG TCC 2441 AAC TGT 2495 TTA CAA 2549 GAA ATT | AAA TTT TGG TGT AAT AAA   | 2288 GAT ACT 2342 TGC ATC 2396 AGT TGT 2450 CCT TTT 2504 GGT GAT 2558 | CTA                                     | 2297 AAG CCA 2351 ATT GTT 2405 CAC TGA 2459 ACT AAC 2513 TTA TGG 2567 TTT TTG | ATC AAG AGT AAG | 2306 TTT ATA 2360 CTC CAA 2414 GGC AAG 2468 TAT CTT 2522 GCT GTT 2576 ATA AAA | GAA AGG GCT TGA AAA        | 2315 TTG GGC 2369 TTC ACT 2423 TCT TGG 2477 CTC TCT 2531 TTA ATA 2585 TAT ATA | CAA GTG GCA TGC TTC       | 2324 GAT AAA 2378 TTT CTG 2432 TGG ATG 2486 CTG TTA 2540 CTG TTA 2594 |
| TCT CCG TAG TGC | GCT TGG 2333 ATG TTG 2387 CTG TCC 2441 AAC TGT 2495 TTA CAA 2549 GAA ATT | AAA TTT TGG TGT AAT AAA   | 2288 GAT ACT 2342 TGC ATC 2396 AGT TGT 2450 CCT TTT 2504 GGT GAT 2558 | CCC GGC                                 | 2297 AAG CCA 2351 ATT GTT 2405 CAC TGA 2459 ACT AAC 2513 TTA TGG 2567 TTT TTG | ATC AAG AGT AAG | 2306 TTT ATA 2360 CTC CAA 2414 GGC AAG 2468 TAT CTT 2522 GCT GTT 2576 ATA AAA | GAA AGG GCT TGA AAA        | 2315 TTG GGC 2369 TTC ACT 2423 TCT TGG 2477 CTC TCT 2531 TTA ATA 2585 TAT ATA | CAA GTG GCA TGC TTC       | 2324 GAT AAA 2378 TTT CTG 2432 TGG ATG 2486 CTG TTA 2540 CTG TTA 2594 |

MVATGSLSSKNPASISELLDCGYHPESLLSDFDYWDYVVPEPNLNEVIFEESTC QNLVKMLENCLSKSKQTKLGCSKVLVPEKLTQRIAQDVLRLSSTEPCGLRGC VMHVNLEIENVCKKLDRIVCDSSVVPTFELTLVFKQENCSWTSFRDFFFSRGR FSSGFRRTLILSSGFRLVKKKLYSLIGTTVIEGS

#### Fig. 4A

| Query: | 6   | SLSSKNPASISELLDCGYHPESLLSDFDYWDYV-VPEPNLNEVIFEESTCQNLVKMLENC   | 64  |
|--------|-----|--|-----|
|        |     | SLS + S+ + G+ PE D Y D V +P+ L +E C NL+++L+                    |     |
| Sbjct: | 45  | SLESSDCESLDSS-NSGFGPEEDSSYLDGVSLPDFELLSDPEDEHLCANLMQLLQES 1    | 100 |
| Ouerv: | 65  | LSKSKQTKLGCSKVLVPEKLTQRIAQDVLRLSSTEPCGLRGCVMHVNLEIENVCKKLDRI 1 | 124 |
| 200-7  |     | LS+++ +++L+P +L ++ +++LRL+ +EPCGLRG ++ V +E C + ++             |     |
| Sbjct: | 101 | LSQARLGSRRPARLLMPSQLLSQVGKELLRLAYSEPCGLRGALLDVCVEQGKSCHSVAQL 1 | 160 |
| _      |     | ·  |     |
| Query: | 125 | VCDSSVVPTFELTLVFKQENCSWTXXXXXXXXXXXXXXXXXXXTLILSSGFRLVKKKLYS 1 | 183 |
|        |     | D S+VPTF+LTLV + ++ W +L LS+GFR++KKKLYS                         |     |
| Shict. | 161 | ALDDGLVDTGOLTLVLDLDGDLWDKTOGLLGGANGGLVDGVGOGLTLGTGFDVLKKKLVG   | 220 |

### FIG. 4B

| Query: | 6   | ${\tt SLSSKNPASISELLDCGYHPESLLSDFDYWDYV-VPEPNLNEVIFEESTCQNLVKMLENC}$                                 | 64  |
|--------|-----|--|-----|
|        |     | SL S + S+ + G+ PE D Y D V +P+ L +E C NL+++L+   |     |
| Sbjct: | 48  | SLESSDCESLDSS-NSGFGPEEDTAYLDGVSLPDFELLSDPEDEHLCANLMQLLQES  | 103 |
| Query: | 65  | ${\tt LSKSKQTKLGCSKVLVPEKLTQRIAQDVLRLSSTEPCGLRGCVMHVNLEIENVCKKLDRI}$                                 | 124 |
|        |     | L++++ . +++L+P +L ++ +++LRL+ +EPCGLRG ++ V +E C + ++   |     |
| Sbjct: | 104 | ${\tt LAQARLGSRRPARLLMPSQLVSQVGKELLRLAYSEPCGLRGALLDVCVEQGKSCHSVGQL}$                                 | 163 |
| Query: | 125 | VCDSSVVPTFELTLVFKQENCSWTXXXXXXXXXXXXXXXXXXXXILILSSGFRLVKKKLYS D S+VPTF+LTLV + ++ W +L LS+GFR++KKKLYS |     |
| a      | 1   | _ <del> </del>   |     |
| SDJCT: | 164 | ALDPSLVPTFQLTLVLRLDSRLWPKIQGLFSSANSPFLPGFSQSLTLSTGFRVIKKKLYS   | 223 |

#### FIG. 5A

| Query: | 1   | MVATGSLSSKNPASISELLDCGYHPESLLSDFDYWDYVVPEPNLNEVIFEESTCQNLVKM<br>MVATGSLSSKNPASISELLD GYHP SLLSDFDYWDYVVPEPNLNEV+FEE+TCONLVKM | 60  |
|--------|-----|--|-----|
| Sbjct: | 1   | MVATGSLSSKNPASISELLDGGYHPGSLLSDFDYWDYVVPEPNLNEVVFEETTCQNLVKM   | 60  |
| Query: | 61  | LENCLSKSKQTKLGCSKVLVPEKLTQRIAQDVLRLSSTEPCGLRGCVMHVNLEIENVCKK<br>LENCLS+SKOTKLGCSKVLVPEKLTORIAODVLRLSSTEPCGLRGCVMHVNLEIENVCKK | 120 |
| Sbjct: | 61  |  | 120 |
| Query: | 121 | LDRIVCDSSVVPTFELTLVFKQENCSWTSLKDFFFSRGRFSSGLKRTLILSSGFRLVKKK<br>LDRIVCD+SVVPTFELTLVFKQE+C WTSLKDFFFSRGRFSSGLKRTLILSSG+RLVKKK | 180 |
| Sbjct: | 121 | LDRIVCDASVVPTFELTLVFKQESCPWTSLKDFFFSRGRFSSGLKRTLILSSGYRLVKKK   | 180 |
| Query: |     | LYSLIGTTVIE 191 LYSLIGTTVIE  |     |
| Sbict: | 181 | LYSLIGTTVIE 191  |     |

### FIG. 5B

| - 1    |     | NLNEVIFEESTCONLVKMLENCLSKSKOTKLGCSKVLVPEKLTORIAODVLRLSSTEPCG 10<br>NL++V S + L + L+ L +K+ L C++V +P LTORIA +++R+S EPCG<br>NLDDVSASAVRELSOOLQAOLRDAKRRHLACTEVTLPNDLTORIAAEIIRMSEREPCG 21 |   |
|--------|-----|---|---|
|        |     | LRGCVMHVNLEIE-NVCKKLDRIVCDSSVVPTFELTLVFKQENCSWTXXXXXXXXXXXX 16 R C + + E E N K++ D V FEL L +Q+ W+   |   |
| Sbjct: | 220 | ERACTLFIEFESEPNKVKRIAYFKVDPDTVSIFELYLTLRQDKSGWSSLVPQFIKN 27   | 5 |
| Query: | 162 | XXXXXTLILSSGFRLVKKKLYS 183 T+ +S F L KKKLYS   |   |
| Sbjct: | 276 | LTRSNTINISPDFTLTKKKLYS 297  |   |

#### FIG. 5C

| Query: | 24  | <b>HPESLLS</b> | DFDY  | VDYV  | VPEPN | ILNE | /IF    | EEST   | CQNL | VKML  | EN    | CLSI | KSKQT | KLGCS | 76     |
|--------|-----|----------------|-------|-------|-------|------|--------|--------|------|-------|-------|------|-------|-------|--------|
|        |     | +P+ L          | SD+   | W + Y | VPE   | N    | ++F    |        | +    | L+KM  |       | N    | K     | L     | +      |
| Sbjct: | 613 | NPDVEL         | SDYVI | MEY   | VPE-  | N    | rives  | LHVNTL | SRYK | LLKMI | KSKNH | NASI | EKQPD | ALLKI | 'A 669 |
|        |     |                |       |       |       |      |        |        |      |       |       |      |       |       |        |
| Query: | 77  | KVLVPE         | KLTQI | RIAQI | OVLRI | SST  | EPCGLI | RGC    | VM   | HVNL  | EIENV | CKKI | DRIV  | 125   |        |
|        |     | ++++           |       |       |       |      |        |        |      |       |       |      |       |       |        |
| Sbjct: | 670 | EIILVT         | D-TQ  | rivfi | DV I  | STVI | IPCGLI | NIIKKF | YQYL | KINI  | PIDVL | PNK  | EWII  | 720   |        |

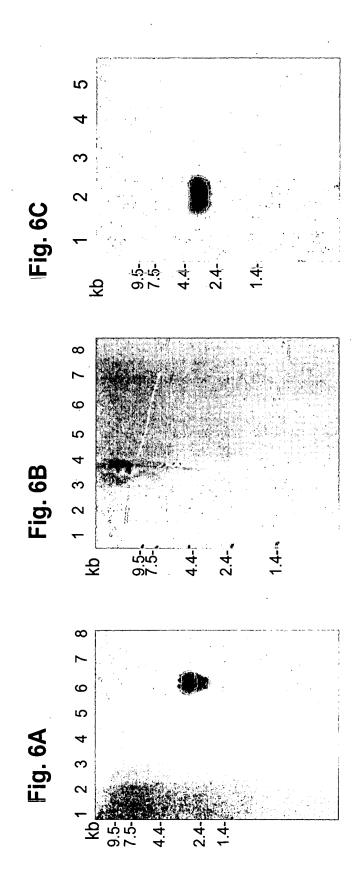


FIG. 7

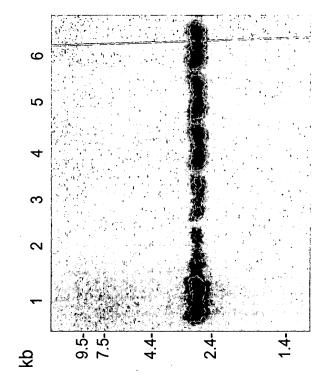
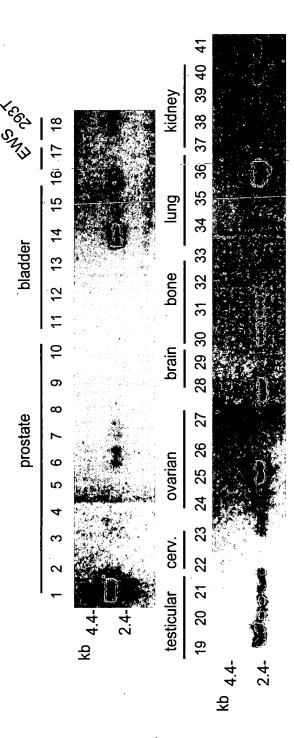
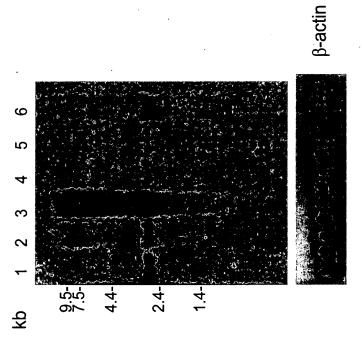


FIG. 8









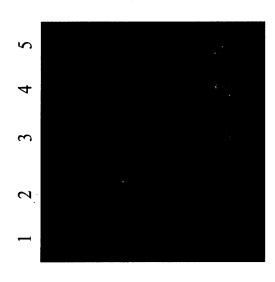


FIG. 11

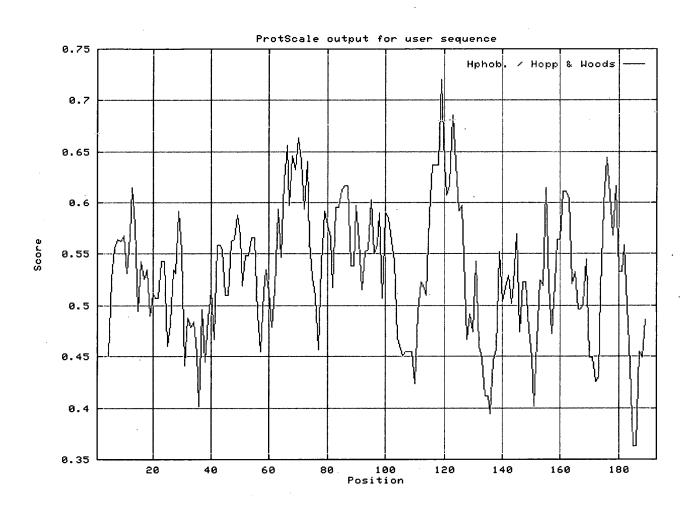


FIG. 12

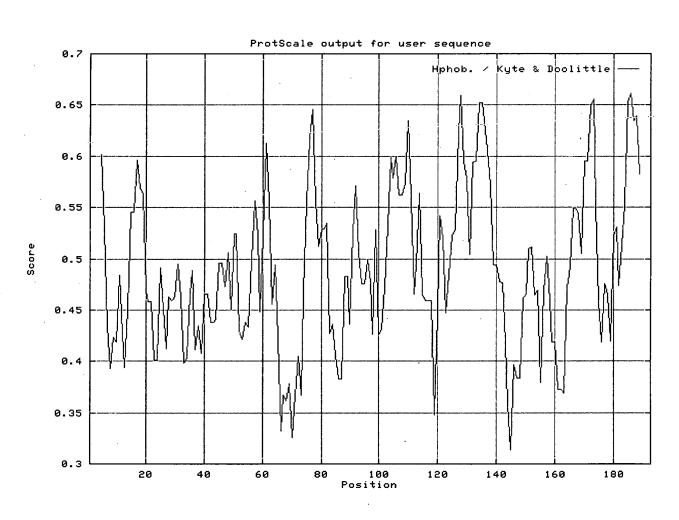
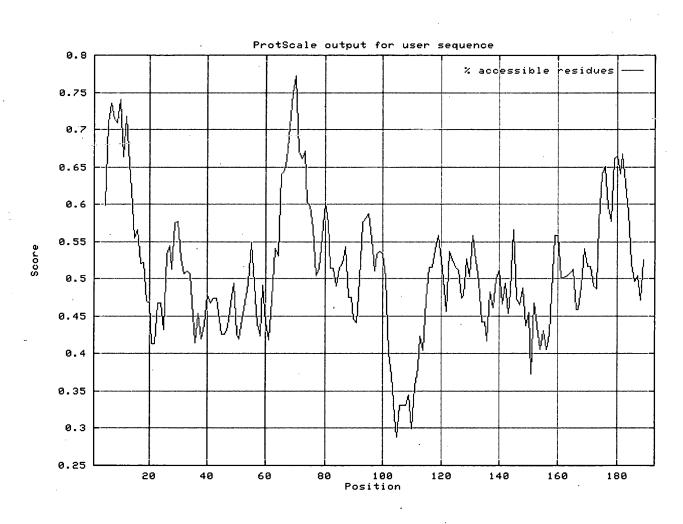


FIG. 13



TORELDEE DECEMBER

FIG. 14

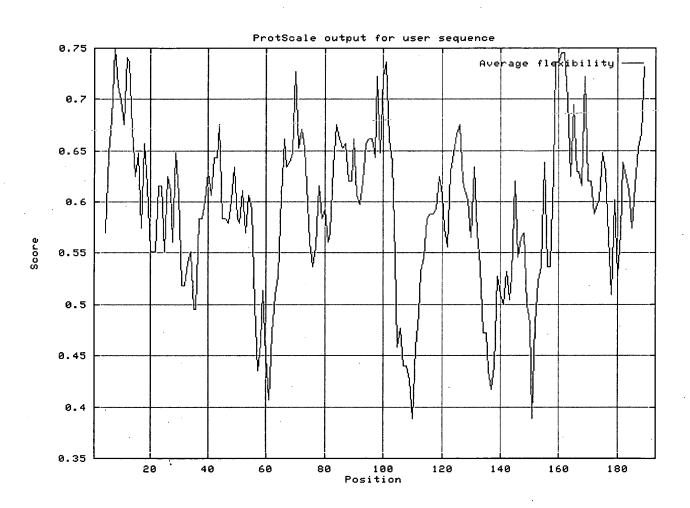


FIG. 15

